

## **What is claimed is:**

**[Claim 1]** A small caliber non-lethal ammunition for use with any of an automatic or semi-automatic weapon having a first dense powder ballast and a two-stage firing sequence, comprising:

- a projectile;
- a first initial primer for initiating the two-stage firing sequence;

wherein the projectile achieves a velocity within a predetermined distance of a muzzle of the weapon launching the projectile; and

wherein a recoil impulse resulting from a launch of the dense powder ballast activates a reloading mechanism of the weapon.

**[Claim 2]** The small caliber ammunition of claim 1, further comprising a propellant charge for launching the dense powder ballast.

**[Claim 3]** The small caliber ammunition of claim 1, wherein the dense powder ballast comprises a tungsten powder.

**[Claim 4]** The small caliber ammunition of claim 1, further comprising a cartridge case that is made, at least in part, of a material that is selected from the group consisting of metal and a metal alloy.

**[Claim 5]** The small caliber ammunition of claim 4, further comprising a ballast cup that decomposes and disintegrates after exiting a muzzle of the weapon after firing, dispersing a plurality of contents of the ballast cup at a velocity.

**[Claim 6]** The small caliber ammunition of claim 5, wherein the ballast cup comprises a rotating band and a spiral to develop a spin in a smooth bore weapon.

**[Claim 7]** The small caliber ammunition of claim 1, wherein a caliber of the small caliber ammunition ranges from approximately 5.56 mm to approximately 9 mm.

**[Claim 8]** The small caliber ammunition of claim 1, wherein the projectile comprises a plurality of balls that are made of a polymer material.

**[Claim 9]** A medium caliber ammunition for use with any of an automatic or semi-automatic weapon having a dense powder ballast and a firing sequence, comprising:

a projectile propellant charge for launching the projectile balls;

a propellant charge for launching the dense powder ballast;

wherein the projectile balls achieve a velocity within a predetermined distance of a muzzle of the weapon launching the medium caliber ammunition; and

wherein a recoil impulse and gas pressure resulting from a launch of the dense powder ballast activates a reloading mechanism of the weapon.

**[Claim 10]** The medium caliber ammunition of claim 9, wherein the dense powder ballast comprises any one or more of tungsten powder, iron powder, iron oxide powder, and sand.

**[Claim 11]** The medium caliber ammunition of claim 9, further comprising a cartridge case that is made, at least in part, of a material that is selected from the group consisting of metal and a metal alloy.

**[Claim 12]** The medium caliber ammunition of claim 11, further comprising a ballast cup that decomposes and disintegrates after exiting a muzzle of the weapon after firing, within a pre-determined distance of the muzzle, dispersing the plurality of projectile balls at the velocity.

**[Claim 13]** The medium caliber cartridge case of claim 12, wherein the ballast cup comprises a rotating band and a spiral to develop a spin in a rifled cartridge case for firing from a smooth bore weapon.

**[Claim 14]** The medium caliber ammunition of claim 9, wherein a caliber of the medium caliber ammunition ranges from approximately 9 mm to approximately 40 mm.

**[Claim 15]** The medium caliber ammunition of claim 9, wherein the projectile balls are made of a polymer material selected from the group consisting of PVC, dense polymers, and filled polymers.

**[Claim 16]** The medium caliber ammunition of claim 11, wherein the medium caliber ammunition comprises an end cap, a polymer cover, and a gas seal.

**[Claim 17]** The medium caliber ammunition of claim 16, wherein the polymer cover separates an interior of the medium caliber cartridge case into a fore section and an aft section, with the ballast cup containing the ballast material in the aft section.

**[Claim 18]** The medium caliber ammunition of claim 17, wherein the fore section contains the plurality of projectile balls.

**[Claim 19]** The medium caliber ammunition of claim 17, wherein the fore section contains a single spin stabilized projectile.

**[Claim 20]** The medium caliber ammunition of claim 17, wherein the aft section contains the primer, the projectile propellant charge, the weapon powering propellant charge, and the dense powder ballast.